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Heads or Tails?: The Effects of Antibiotics in Stream Water on Planaria Regeneration.

This project studied the effects of antibiotics on the regeneration of planaria in serial dilutions of three different antibiotics. The control had no antibiotics in it. The antibiotics used were penicillin, quinolone, and cephalosporin. Dilutions of 1/1,000, 1/10,000, 1/100,000, 1/1,000,000, and 1/10,000,000 were made for each antibiotic. There were 10 planaria halves (5 tails and 5 heads) in each dilution for each antibiotic. This made a total of five petri dishes for each of the antibiotics plus two controls. The data was taken every 24 hours and recorded on my data sheets. I hypothesized that: 1. The regeneration of the planaria halves would be slower in all the antibiotic dilutions. 2 The more concentrated dilution of a antibiotic would result in more death and/or slower regeneration. 3. Not all the antibiotics would slow the regeneration in the same way. In general, my hypothesis was proven. But there were other results that I didn't expect. Lower concentrations of antibiotics allowed more regeneration. However: 1. Cephalosporin - in all dilutions allowed regeneration of heads, but not tails. 2. Penicillin- in all dilutions allowed regeneration of tails, but no heads. 3. Quinolone - allowed regeneration of heads and tails at middle concentrations, but no regeneration of heads or tails at the lowest concentrations (those with the greatest dilution).